IB. AMENDMENTS TO THE CLAIMS

Please enter the amendments to claims 1, 2, 7, and 10, as shown below.

Please enter new claims 24-27, as shown below.

1. (Currently amended) A ~~mammalian~~ polynucleotide present in other than its natural environment encoding a polypeptide that exhibits monoacylglycerol and/or diacylglycerol acyltransferase ~~transferase~~ activity and comprising a nucleotide sequence that has at least [[50%]] 90% nucleotide sequence identity to the sequence set forth in SEQ ID NO:03 ~~a sequence selected from the group consisting of SEQ ID NO:01, 03, 05, 07, 09, 11, 13, 15, and 18~~.

2. (Currently amended) The polynucleotide according to claim 1, wherein said encoded polypeptide exhibits diacylglycerol acyltransferase activity ~~is DGAT2α~~.

3. (Withdrawn) The polynucleotide according to claim 1, wherein said encoded polypeptide is MGAT1.

4. (Withdrawn) A mammalian polypeptide present in other than its naturally occurring environment, wherein said polypeptide is selected from the group consisting of diacylglycerol acyltransferase 2α (DGAT2α) and monoacylglycerol acyltransferase-1 (MGAT1).

5. (Withdrawn) The polypeptide according to Claim 4, wherein said polypeptide has an amino acid sequence that is substantially the same as or identical to a sequence selected from the group consisting of SEQ ID NO:02, SEQ ID NO:04, SEQ ID NO:06, SEQ ID NO:08, SEQ ID NO:10, SEQ ID NO:12, and SEQ ID NO:14.

6. (Withdrawn) The polypeptide according to claim 4, wherein said polypeptide is substantially pure.

7. (Currently amended) An expression cassette comprising a transcriptional initiation region functional in an expression host, a polynucleotide having a nucleotide sequence found in the ~~nucleic acid~~ polynucleotide according to claim 1 under the transcriptional regulation of said transcriptional initiation region, and a transcriptional termination region functional in said expression host.

8. (Original) A cell comprising an expression cassette according to claim 7 as part of an extrachromosomal element or integrated into the genome of a host cell as a result of introduction of said expression cassette into said host cell.

9. (Original) The cellular progeny of the cell according to claim 8.

10. (Currently Amended) A method of producing a ~~DGAT2α or an MGAT1~~ polypeptide that exhibits monoacylglycerol and/or diacylglycerol acyltransferase activity, said method comprising:

growing a cell according to claim 8, whereby said polypeptide is expressed; and

isolating said polypeptide substantially free of other proteins.

11. (Withdrawn) A monoclonal antibody binding specifically to a DGAT2α or an MGAT1 polypeptide.

12. (Withdrawn) The monoclonal antibody according to claim 11, wherein said antibody binds specifically to DGAT2α and inhibits diglyceride acyltransferase activity of said polypeptide.

13. (Withdrawn) The monoclonal antibody according to claim 11, wherein said antibody binds specifically to MGAT1 and inhibits monoacylglycerol acyltransferase activity of said polypeptide.

14. (Withdrawn) The monoclonal antibody according to Claim 11, wherein said antibody is a humanized antibody.

15. (Withdrawn) A method for inhibiting the activity of a protein according to claim 4, said method comprising:

contacting said protein with an agent that inhibits the acyltransferase activity of said protein.

16. (Withdrawn) The method according to Claim 15, wherein said agent is a small molecule.

17. (Withdrawn) The method according to Claim 15, wherein said agent is an antibody.

18. (Withdrawn) The method according to Claim 17, wherein said agent is a monoclonal antibody.

19. (Withdrawn) A method of modulating a symptom in a mammalian host of a disease condition associated with the acyltransferase activity of a DGAT2α or an MGAT1 protein, said method comprising:

administering to said host a pharmaceutical composition comprising an effective amount of an active agent that modulates said DGAT2α or MGAT1 activity in said host.

20. (Withdrawn) The method according to claim 19, wherein said symptom is hypertriglycemia.

21. (Withdrawn) The method according to claim 19, wherein said symptom is obesity.

22. (Withdrawn) A method of producing a triacylglycerol, said method comprising:

contacting a diacylglyercol and fatty acyl CoA with a DGAT2α polypeptide under conditions sufficient to said triacylglycerol to be produced.

23. (Withdrawn) A method of identifying an agent that inhibits an acyltransferase activity of a DGAT2α or an MGAT1 polypeptide, the method comprising:

contacting said DGAT2α or MGAT1 polypeptide with a test agent in the presence of magnesium ions, a fatty acyl CoA, and an acyl acceptor; and

determining the effect, if any, of the test agent on the production of acylated acceptor.

24. (New) The polynucleotide according to claim 1, wherein said polynucleotide comprises a nucleotide sequence that has at least 95% nucleotide sequence identity to the sequence set forth in SEQ ID NO:03.

25. (New) The polynucleotide of claim 1, wherein said encoded polypeptide exhibits monoacylglycerol transferase activity and diacylglycerol acyltransferase activity.

26. (New) The polynucleotide of claim 1, wherein said encoded polypeptide has a length of from about 300 amino acids to about 500 amino acids.

27. (New) The polynucleotide of claim 1, wherein said encoded polypeptide has at least about 90% amino acid identity to SEQ ID NO:04.